

V4 兩種辨認. R 語言.

- $x = 11 \rightarrow \text{print}(x)$  get 11.   
  $y = 7 \rightarrow \text{print}(x)$  get 7. } "x", "y" check what.
- $\text{rm}()$   $\Rightarrow$  remove.   
 key 大小寫有差.  $1x \neq 1.X$  記清楚你指的指令.
- "sth"  $\Rightarrow$  make it a character.   
 key 可使用乘除加減並 store it.   
  $\text{sqrt}(y) = y^{(1/2)}$ ,  $\log(y)$ ,  $\exp(y)$ . 像計算機.
- key 顯示 "+" 表示指令未完成.
- \* 上鍵帶你回上一個指令 "Δ"
- \* # the code below is for ... 像 pin 針.

V4

- $x_1 = c(1, 3, 5, 7, 9)$  集合.   
  $\text{gender} = c(\text{male}, \text{female})$ . }  $\text{seq}(\text{from } 1 \text{ to } 7 \text{ by } 1) = 1 \sim 7$ .   
  $z = 7 \Rightarrow 2, 3, 4, 5, 6, 7$ . }  $(\text{from } 1 \text{ to } 7 \text{ by } 1/3) = \text{間距 } 1/3 \text{ 的 } 1 \sim 7$ .
- $\text{rep}(?, \text{times} = ?)$   $\Rightarrow$  repete. key 可結合上述語序.
- $x = 1:5$ ,  $y = c(1, 3, 5, 7, 9)$ .   
  $\hookrightarrow$  如果長度一樣可以 +, -, x, ÷.
- 可執行 +, -, x, ÷.
- $y[3] \Rightarrow 5$    
 項的標號.
- $y[1:3] \Rightarrow 1, 3, 5$ .
- $y[c(1, 5)] \Rightarrow 1, 9$ .
- $y[-c(1, 5)] \Rightarrow$  排除 1, 9.  $\Rightarrow 3, 5, 7$ .
- $\text{matrix}(\text{排列! } c(1, 2, 3, 4, 5, 6, 7, 8, 9), \text{nrow} = 3, \text{byrow} = \text{TRUE})$    
  $\Rightarrow$ 

1	2	3
4	5	6
7	8	9

  
  $\text{False} \Rightarrow$ 

1	4	7
2	5	8
3	6	9

  
 (type)  $\text{mat} =$  類似儲存. 圖表.

V5 讀入 excel. 先變成 csv 檔.

- $\text{data1} = \text{read.csv}(\text{file.choose}(), \text{header} = T)$
- open file csv 工具例開.
- key 還有幾種打開方式在 1.5 影片! 1.5b
- $\text{data2} = \text{read.table}(\text{file} = "where", \text{header} = \text{TRUE}, \text{sep} = ",")$    
  $\downarrow$    
  $\text{it}$    
  $(\text{control})$

V6. ? write.table.

◦ 從 R 改 excel.

◦ `write.csv(DataToExport, file = "ExportedFileName.csv", sep = ",", "`  
name of new file

◦ 不要 raw name.

`, raw.names = F, " )`

◦ 另存新檔: `write.csv(DataToExport, file = "/Users/OldMarin/TEACHING/  
FolderToSaveIn/ExportedFileName.csv", raw.names = F)` 新址 to save

V7.

◦ `dim(Data)` 檢視 ex. 725, 6.

◦ `head(Data)`, `tail(Data)`.

key `Data[c(5,6,7,8,9), -]` 調資料 or `Data[-(4:722), ]` 除 4~722 列

V8.

◦ `mean(LungCapData$Age)`

直接叫 Age 變 便 R 知道: `attach(LungCapData) → mean(Age)`  
(`detach` 消除)

★ `name(Data)` 叫出變名.

`class()` 幫變分類.

`levels(name)` 怎麼分類.

`summary(Data)` 大總結數據.

◦ `X = c(0, 1, 1, 1, 0, 0, 0, 0, 0)` `class(X) = numeric.`

`X = as.factor(X)` `class(X) = factor` 文字.

[summary 不同]

V9.

◦ 只要特定變, `mean(Age[Gender == "female"])` for represent the meaning of equality in mathematical

◦ `FemData = LungCapData[Gender == "female", -]`

↙ 另外抓成小檔案.

◦ `MaleOver15 = LungCapData[Gender == "male" & Age > 15, -]`

\*, - 代表 space 空格.



\* Excel 登錄期中及影片的指令.

• `aaa = c(1, 8, 10)` 集合.

• `bbb = "try"` 字元

• `ccc = data.frame (col1=c(12, 34), col2=c(56, 78))` column.

} class 類別不同.

↓  
key: 可用 `list( , , )` 整理.

`[[ ]]` 兩個中括號 = Item.

• `library(stringr)` 讓 `str_` 指令生效.

`kk = "abcdefghijk"` 字串.

`pp = str_split(kk, "e")` 以 "e" 去分段得出 "abcd", "fgh", "ijk"  
extra: 寫 "h", "d" 變成 2 個 Item. (拆 h 及拆 d)  
key: 空格也會成為字元!

• `kk = "John Wang"`

`yy = str_split(kk, "_")` 分開 John, Wang.

`zz = paste0("Marry", yy[1][2])` 合成 Marry Wang.

• `library(pdfutils)`